

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:)
FOCKE, Heinz et al.)
For: **METHOD AND APPARATUS FOR**)
THE INSPECTION OF OBJECTS)

PRELIMINARY AMENDMENT

Box: New Patent Application
Honorable Commissioner for
Patents
Washington, D.C. 20231

Atlanta, Georgia 30308-2216

14 September 2001

Sir:

Prior to examining the above-identified application, please make the following amendments:

IN THE SPECIFICATION

Page 1, before line 1, insert --This is a priority application based upon German patent application 100 46 401.7, dated 18 September 2000--;

Page 1, after the preceding priority statement, delete "Description" and insert the following heading --FIELD OF THE INVENTION--;

Page 1, before line 11, insert the following heading --BACKGROUND OF THE INVENTION--;

Page 2, before line 1, insert the following heading --SUMMARY OF THE INVENTION--;

Page 2, before line 22, insert the following heading --BRIEF DESCRIPTION OF THE DRAWINGS--;

Page 3, before line 3, insert the following heading --DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT--; and

IN THE CLAIMS

(a marked-up set of Claims as presently amended are attached hereto as Appendix A)

1. Method for the inspection of objects, such as packs, with respect to the proper positioning of blanks placed on them, such as labels, in particular for inspecting the proper arrangement of band strips on cigarette packs, with the objects being moved past an inspection means and illuminated by one or more illuminating means in the region of the inspection means and with the positioning being identified on the basis of border edges of the blank, wherein the blank is illuminated laterally at one or more of its border edges while the inspection means scans the blank from an essentially frontal aspect.
2. Method according to Claim 1, wherein when an object has reached an inspection position, a trigger sensor generates a trigger signal which turns on the illumination means and/or causes a snapshot of the object to be made by the inspection means.
3. Method according to Claim 1, wherein a plurality of evaluation windows within the image captured by the inspection means during the snapshot are evaluated for differences in brightness in order to obtain precise positions of the border edges, with the evaluation windows being selected in the region of the expected border edge positions and/or in the region of a reference position of a pocket for receiving an object.
4. Method according to Claim 1, wherein the width as well as the position of a band strip are evaluated with respect to its centered position relative to the pack and/or to any skewed position.
5. Apparatus for the inspection of objects, such as packs, with respect to the proper positioning of blanks placed on them, such as labels, in particular for inspecting the proper arrangement of band strips on cigarette packs, with an inspection means and one or more illumination means in the region of a conveying path of the objects, with the inspection means identifying the positioning on the basis of border edges of the blank wherein the main direction of illumination of each illumination means is directed at one or more border edges and the main line of sight of the inspection means is directed at the blanks at an essentially frontal aspect.

6. Apparatus according to Claim 5, wherein each main direction of illumination assumes an angle of 45° to 90° , in particular 70° to 80° , to the main line of sight.
7. Apparatus according to Claim 5, wherein the illumination means have bright white-light diodes.
8. Apparatus according to Claim 5, wherein the illumination means can be turned on and off in pulsed-mode operation.
9. Apparatus according to Claim 5, further comprising a trigger sensor for detecting an inspection position of an object and for generating a trigger signal for turning on the illumination means and/or for generating a snapshot of an object in the inspection position.
10. Apparatus according to Claim 5, wherein the inspection means has an electronic camera, in particular a CCD camera, and that predetermined areas, in particular evaluation windows, can be selected within the image captured by the camera and evaluated for differences in brightness.
11. Apparatus according to Claim 10, wherein at least two evaluation windows are directed at the border edges of a blank and that in particular a further evaluation window is directed at a reference position of a pocket for receiving an object.
12. Apparatus according to Claim 5, further comprising an arrangement in the region of an open pocket end of a turret, in particular of the drying turret, of a cigarette packer and/or in the region of a faulty pack conveyor for the elimination of any faulty packs in the conveying direction upstream of the faulty pack conveyor.

IN THE ABSTRACT

(a marked-up version of the Abstract as amended is attached as Appendix B)

Please amend the abstract as follows:

The invention relates to a method and apparatus for the inspection of objects, such as cigarette packs, with respect to the proper positioning of blanks placed upon them, such as band strips, by means of an inspection means. Known inspection means have the disadvantage that they are very expensive. The invention provides a cost-efficient alternative. To this end, blanks are illuminated laterally at one or more border edges while the inspection means scans the blank at an essentially frontal aspect.

REMARKS

The Preliminary Amendment is presented in an effort to provide both Headings for the application, remove reference numerals from the Abstract, and to amend European-style Claims to better conform to U.S. practice.

Should the Examiner have any questions or reservations regarding the present Preliminary Amendment, the Examiner is invited to telephone the undersigned attorney at 404.885.2761.

The Commissioner is hereby authorized to charge any fees which may be required or credit any overpayment to Deposit Account No. 20-1507.

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail No. EL81232792545 in an envelope addressed to: Box Patent Application, Honorable Commissioner of Patents, Washington, D.C. 20231, on 9/17/01

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Respectfully submitted,

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APPENDIX A

1. Method for the inspection of objects, such as packs [(10)], with respect to the proper positioning of blanks [(12, 17)] placed on them, such as labels, in particular for inspecting the proper arrangement of band strips [(12)] on cigarette packs [(10)], with the objects [(10)] being moved past an inspection means [(39)] and illuminated by one or more illuminating means [(41, 42)] in the region of the inspection means [(39)] and with the positioning being identified on the basis of border edges [(20, 22)] of the blank [(12, 17)], **[characterized in that]**wherein the blank [(12, 17)] is illuminated laterally at one or more of its border edges [(20, 22)] while the inspection means [(39)] scans the blank [(12, 17)] from an essentially frontal aspect.

2. Method according to Claim 1, **[characterized in that]**wherein when an object has reached an inspection position, a trigger sensor [(46)] generates a trigger signal which turns on the illumination means [(41, 42)] and/or causes a snapshot of the object [(10)] to be made by the inspection means [(39)].

3. Method according to Claim 1, **[characterized in that that]**wherein a plurality of evaluation windows [(49A-D)] within the image captured by the inspection means [(39)] during the snapshot are evaluated for differences in brightness in order to obtain precise positions of the border edges [(20, 22)], with the evaluation windows [(49A-D)] being selected in the region of the expected border edge positions and/or in the region of a reference position of a pocket [(34)] for receiving an object [(10)].

4. Method according to Claim 1, **[characterized in that]**wherein the width as well as the position of a band strip [(12)] are evaluated with respect to its centered position relative to the pack [(10)] and/or to any skewed position.

5. Apparatus for the inspection of objects, such as packs [(10)], with respect to the proper positioning of blanks [(12, 17)] placed on them, such as labels, in particular for inspecting the proper arrangement of band strips [(12)] on cigarette packs [(10)], with an inspection means [(39)] and one or more illumination means [(41, 42)] in the region of a conveying path [(35)] of the objects [(10)], with the inspection means [(39)] identifying the positioning on the basis of border edges [(20, 22)] of the blank [(12, 17)], **[characterized in that]**wherein the main

direction of illumination [(44, 45)] of each illumination means [(41, 42)] is directed at one or more border edges [(20, 22)] and the main line of sight [(43)] of the inspection means [(39)] is directed at the blanks [(12, 17)] at an essentially frontal aspect.

6. Apparatus according to Claim 5, **[characterized in that that]**wherein each main direction of illumination [(44, 45)] assumes an angle of 45° to 90°, in particular 70° to 80°, to the main line of sight [(43)].

7. Apparatus according to Claim 5, **[characterized in that]**wherein the illumination means [(41, 42)] have bright white-light diodes [(48)].

8. Apparatus according to Claim 5, **[characterized in that]**wherein the illumination means [(41, 42)] can be turned on and off in pulsed-mode operation.

9. Apparatus according to Claim 5, **[characterized by]**further comprising a trigger sensor [(46)] for detecting an inspection position of an object [(10)] and for generating a trigger signal for turning on the illumination means [(41, 42)] and/or for generating a snapshot of an object [(10)] in the inspection position.

10. Apparatus according to Claim 5, **[characterized in that that]**wherein the inspection means [(39)] has an electronic camera, in particular a CCD camera, and that predetermined areas, in particular evaluation windows [(49A-D)], can be selected within the image captured by the camera and evaluated for differences in brightness.

11. Apparatus according to Claim 10, **[characterized in that]**wherein at least two [or three] evaluation windows [(49A-C)] are directed at the border edges [(20, 22)] of a blank [(12, 17)] and that in particular a further evaluation window [(49D)] is directed at a reference position of a pocket [(34)] for receiving an object [(10)].

12. Apparatus according to Claim 5, **[characterized by]**further comprising an arrangement in the region of an open pocket end of a turret, in particular of the drying turret [(29)], of a cigarette packer [(23)] and/or in the region of a faulty pack conveyor [(32)] for the elimination of any faulty packs [(35)] in the conveying direction upstream of the faulty pack conveyor [(32)].

APPENDIX B

The invention relates to a method and apparatus for the inspection of objects, such as cigarette packs [(10)], with respect to the proper positioning of blanks placed upon them, such as band strips [(12)], by means of an inspection means [(39)]. Known inspection means have the disadvantage that they are very expensive. The invention provides a cost-efficient alternative. To this end, blanks are illuminated laterally at one or more border edges [(22)] while the inspection means [(39)] scans the blank [(12)] at an essentially frontal aspect.

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